Mobile Apps

Back in 2010, *Wired* magazine ran a bright red cover with large black type proclaiming "The Web Is Dead." Chris Anderson, the same man who is responsible for the book *The Long Tail*, was arguing that the age of open-standard web pages was on the decline, leading the way to going online with specialized mobile apps. He wrote:

> You wake up and check your email on your bedside iPad—that's one app. During breakfast you browse Facebook, Twitter, and *The New York Times*—three more apps. On the way to the office, you listen to a podcast on your smartphone. Another app. . . . At the end of the day, you come home, make dinner while listening to Pandora, play some games on Xbox Live, and watch a movie on Netflix's streaming service.
>
> You've spent the day on the Internet—but not on the Web.[77]

Now, in the second half of the decade, some of what Anderson predicted has come true. Apps are a big part of how we interact online. Especially a few apps like Facebook, Twitter, and Snapchat—our social media. On the other hand, much of our interaction online is done through the mobile web—scaled-back versions of websites designed to work on everything from a nine-inch iPad screen, to a giant seven-inch Samsung phone, down to the smallest four-inch smartphone.

Apps are clearly important, but they aren't necessarily an either/or proposition with the web. The Pew Research Center's 2018 "Digital News Fact Sheet" notes that all forty of the top digital news sites have a presence on Facebook, Twitter, YouTube, and Instagram.[78]

What there can be no doubt about is that mobile devices are becoming the dominant way of going online. Just look at where the money is coming from online. In 2015, of the top fifty newspapers, forty-four had more mobile traffic than desktop computers; of the top national TV news outlets, all eight of eight had more mobile than desktop traffic, and for the top forty **digital native** publishers (those that don't have a legacy media component), thirty-eight had more mobile traffic.[79]

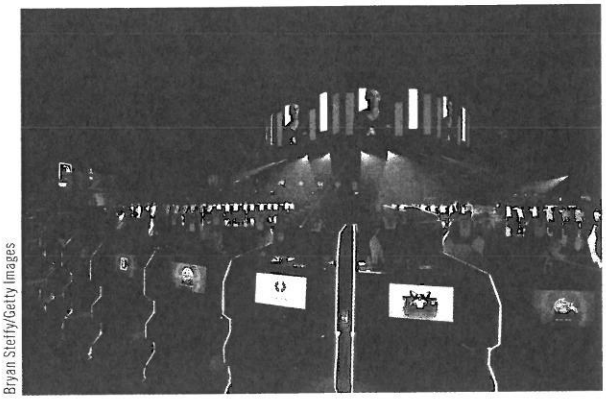
Video Games as Mass Communication

In my own media literacy class, I used to raise the question as to whether video games and video game consoles count as mass communication and whether they are a new mass medium. I think the answer is a definite yes, for a number of reasons[80]:

Video game consoles are media content delivery devices. The PlayStation 2 was a DVD player as well as a game console, and the PlayStation 3 was among the early Blu-ray players. Microsoft's Xbox One is now pitching itself as a general-purpose media entertainment hub that can be used to stream television programs and movies, play video games, and stream video game play back onto the internet.[81] Video games, like television shows or movies, have stars. They have mascots. The most prominent of these is Super Mario, who has been a force in the gaming world for Nintendo since 1981, but the list also includes characters such as Sonic the Hedgehog for Sega, *Pokémon*'s Pikachu, and *Halo*'s Master Chief for the Microsoft Xbox.

Video games are a new venue for advertising. Just like newspapers, magazines, and websites are funded by ad revenue, many game publishers are turning to the advertising world to help manage costs. Companies such as IGA Worldwide are devoted entirely to securing deals for companies to advertise in games, which have a near-perfect saturation in the eighteen- to thirty-four age market. When Barack Obama was making his first run for the presidency back in 2008, he advertised in video games—the first presidential candidate ever to do so.[82] Video games, now more than ever, are the site of entire communities. One needs only to look to online-specific games, such as *World of Warcraft*, or to online versions of console games, such as

VIDEO GAMES AS A SPECTATOR SPORT



Bryan Steffy/Getty Images

Opening weekend for the eSports arena at Caesars Entertainment Studios in Las Vegas, Nevada.

Video games are no longer just something you play. They are now a legitimate spectator sport. Back in the summer of 2014, a fish named Grayson captured the attention of gaming fans nationwide by playing the video games *Pokémon Red* and *Blue* on a Game Boy emulator using a motion sensor aimed at his fish tank. That a pair of technically oriented college students in New York would rig some equipment to allow their fish to randomly play a video game is not surprising. The fact that as many as twenty-two thousand people at a time would watch the fish play *Pokémon* using the video game streaming service Twitch is kind of amazing.[90]

After some initial uncertainty, video game manufacturers have gotten on board with their games being streamed and viewed. In fact, the latest consoles from Sony and Xbox (Microsoft) are designed to stream on Twitch. In May 2014, stories originating in the entertainment press came out saying that Google was preparing to buy video game streaming service Twitch, but in the end, online retail giant Amazon bought the company for $970 million.[91] Twitch was founded in 2011 as an outgrowth of the live-streaming video site Justin.tv, and it now has more than 15 million daily viewers watching an average of 106 minutes of live gaming, and more than 2.2 million gamers streaming their play monthly.[92] Amazon's purchase of the video game streaming service is part of its larger commitment to gaming. It has an in-house gaming studio, and is one of the largest video game vendors in the world. (Note that while Amazon paid close to $1 billion for Twitch, legacy news provider the *Washington Post* sold for only $250 million to Amazon founder Jeff Bezos.)

Among the most popular games to watch streaming are the so-called battle royale games. What's a battle royale? Video game streamer Aaron Blackman, whom you met back in Chapter 1, compares them to the competition in *The Hunger Games*, where one hundred players enter a digital arena to fight to the death until only one player or team is left standing. In the spring of 2018, the most popular of these was the free-to-play game *Fortnite* found on the PC, PlayStation 4, and Xbox One.[93]

At the time, Blackman writes, the most popular *Fortnite* streamer was Tyler Blevins, also known as "Ninja." A former pro gamer, Ninja had been streaming since 2011. His stellar play was noticed by Canadian rapper and fellow gamer Drake, and the two began to plan to play *Fortnite* one night. On March 14, 2018, the two began streaming *Fortnite* together without any fanfare or lead-up promotion. Word spread quickly about the matchup over Twitter, and the pair set a new record for concurrent viewing with 628,000 people watching the stream live. As the evening progressed, rapper Travis Scott and Pittsburgh Steelers wide receiver JuJu Smith-Schuster joined in.

Then in April, Ninja hosted a live night of *Fortnite* at the new eSports Arena at the Luxor Hotel in Las Vegas. Fans paid $75 to enter, and were promised a spot in two of the evening's ten games. Ninja played in each of the ten games and paid $2,500 to the last player standing in each game. He also paid a $2,500 bounty to whoever killed his character in each game. The live stream on Twitch broke his old record with more than 667,000 viewers at its peak. As of late April 2018, Ninja had more than 202,000 Twitch subscribers, each paying $5 a month that gets split between Ninja and Twitch. That means that Ninja is making more than $500,000 a month to stream video games.

SECRET 3 ▶ Broadcast of live video game play isn't limited to long-tail channels like Twitch, however. In 2016, for the second year in a row, cable giant ESPN skipped showing traditional physical sports during prime time on an April Sunday night. Instead of showing an NBA game, viewers instead watched ten college students competing in the Grand Final round of the Heroes of the Dorm tournament, playing for a chance at free college tuition. The tournament began with more than four hundred teams from universities across the country, and ended with students from Arizona State winning up to $75,000 each in tuition for the rest of their college careers. Hulu is also streaming four eSports shows including commentary, tournament highlights, and competitions. Both Hulu and ESPN are interested in getting some of the attention Twitch is getting with the broadcast of **eSports** (that is, organized team competition in video games for spectators), thus illustrating Secret 3—Everything from the margin moves to the center.[94]

Before you read this chapter, would you have considered video games to be a form of mass communication? Why or why not? In your mind, what does or does not make video games a mass medium?

WHAT are eSports?

WHO plays them?

WHO are the spectators, and how do they watch these games?

HOW big are the audiences for eSports?

HAVE you watched video game streamers? Who are your favorites? What games do you like to watch?

Activate your interactive ebook to watch the Media Transformation video that accompanies this story!

the *Halo* or *Call of Duty* series. The concept of online communities has become commonplace today. Now, instead of gathering around the water cooler to discuss the latest news or entertainment item, people are using Bluetooth headsets to talk to friends and family while playing capture the flag or fighting bosses to help their character rise to the next level.[83]

Video games can be more profitable than the movies. In 2013, the controversial video game *Grand Theft Auto V* was released. It has sold at least ninety million copies at an estimated price of $60 a copy. That means over the last five years the game has earned more than $6 billion.[84] Compare that with the movie global box office champ *Avatar* from 2009 that's grossed nearly $2.8 billion. In fact, if you combine that with the global box office of the number-two movie, *Titanic*, which brought in $2.2 billion, *Grand Theft Auto V* still brought in more money.[85] In 2015, the movie industry had a record year when it came to total box office dollars, hitting more than $11 billion for the North American market. This was a year with really big movies being released, including *Jurassic World*, *Avengers: Age of Ultron*, and *Star Wars Episode VII: The Force Awakens*. But video game software sales were $16.5 billion for the U.S. market. And that's not including system sales—just the games themselves. Total video game revenue topped $23 billion. (As *Fortune* magazine notes, while sales of games systems are important, software sales are considered the best measure of success in the gaming industry.)[86]

PG/Bauer-Griffin/Getty Images

▲ *Pokémon GO*, the augmented reality game, became the most downloaded mobile app in its first week of release in the history of the App Store. Since then, the app has been downloaded one hundred million times on Android and iOS (combined) and generates about $10 million in revenue each day.

Video games are protected by the First Amendment. A U.S. Supreme Court ruling in 2011 determined that states cannot pass laws that restrict the sale of video games to minors. (This does not, however, limit the right of the industry to set standards for who can buy which games.) The case *Brown v. Entertainment Merchants Association* struck down a California law that prohibited the sale of video games to minors that depict "killing, maiming, dismembering or sexually assaulting an image of a human being."[87] The opinion from conservative justice Antonin Scalia states that while these games may be disgusting, "disgust is not a valid basis for restricting expression."

Given all this, it's hard not to see video games as a mass medium or a form of mass communication. According to the Pew Research Center, 97 percent of teens aged twelve to seventeen play video games in one form or another, with fully 50 percent reporting having played "yesterday." Of those who play video games, 86 percent play on consoles, 73 percent play on computers, and 60 percent play on portable game systems.[88] Among adults aged eighteen and older, 53 percent play video games, and

▲ *The Sims 4*, the latest installment of EA's simulation game, introduced a new update that allows unprecedented gender customization options. Players can now create avatar characters with any type of physique, walk style, and tone of voice and then accessorize them in any way they choose—regardless of gender.

21 percent play daily. Computers are the most popular place for older users to play video games; consoles are more common among younger players.[89]

Diversity and Representation in Video Games

Video games have traditionally not been a hot spot for representational diversity. The characters in games are typically portrayed as white, male heterosexuals (to the degree that sexuality enters into gaming characters). A 2015 study by media research company Nielsen (the folks who do the television ratings) found that lesbian/gay/bisexual/transgender (LGBT) and Asian American gamers feel that they have limited opportunities to create game characters who represent them in real life (IRL).[95]

Among LGBT gamers, 65 percent do not feel that all sexual orientations are given adequate opportunity for representation, while only 28 percent of heterosexual gamers feel that opportunity is lacking. Asian American gamers are much more likely to feel video game characters are not inclusive than are Hispanic, African American, and non-Hispanic whites.

Interestingly enough, LGBT consumers are slightly more likely to play video games than are heterosexual consumers, and Asian American consumers are more likely to game than all other ethnicities. For the percentages of various populations who play video games, see Table 10.2.

There are, of course, games that are exceptions. The Xbox series *Saints Row* has in some editions of the game allowed for a wide range of body diversity, including extensive variation in body weight and level of masculinity and femininity. Comic artist Kiva Bay, an obese woman who has a nonbinary approach to gender identity, writes that having the opportunity to truly create a character in an open-world game who really represented her was liberating and life affirming. She writes, "In Saints Row 2, I am not a hero. But I am me. . . . And that's a powerful feeling that I should get to have more often."[96] One game that has engendered a high level of controversy is the survival game *Rust*. The game has always randomized character features such as skin color, limb length, and other characteristics we won't get into here. All of the characters in the game, however, were male. That is, they were up until the spring of 2016 when the game designers gave many players a female avatar to play with, whether they wanted the gender swap or not.

Developers Garry Newman and Taylor Reynolds addressed the sometimes ugly complaints about the gender swap on their blog:

> We understand that this is a sore subject for a lot of people. We understand that you may now be a gender that you don't identify with in real-life. We understand that this causes you distress and makes you not want to play the game anymore. Technically nothing has changed, since half the population was already living with those feelings. The only difference is that whether you feel like this now is decided by your [game ID] instead of your real life gender.[97]

(We'll talk more about gender and online conflict in Chapter 14.)

▼ TABLE 10.2

Percentage of Consumers Who Play Video Games

Demographic	Users
LGBT	65 percent
Heterosexual	63 percent
Asian American	81 percent
African American	71 percent
Non-Hispanic whites	61 percent
Hispanics	55 percent
Men	68 percent
Women	56 percent

Source: "How Diverse Are Video Gamers—and the Characters They Play?" *Nielsen*, March 24, 2015, http://www.nielsen.com/us/en/insights/news/2015/how-diverse-are-video-gamers-and-the-characters-they-play.html.

The Internet and Society

Despite having its roots in the world of military research, the internet works primarily to permit the independent use of computers. The earliest users of time-sharing computer systems, in

which several people on separate terminals could share a single computer, started seeing these large institutional computers as "theirs." Stewart Brand, author of the *Whole Earth Catalog*, said that users soon began to understand how they could use computers for their own purposes:

> Kennedy had said, "Ask not what your country can do for you. Ask rather what you can do for your country." . . . Basically we were saying, "Ask not what your country can do for you. Do it yourself." You just tried stuff and you did it yourself. You didn't ask permission.[98]

This would become the rallying cry of the internet: Take control of it for yourself. This attitude sent shock waves throughout the media industry because it transformed the model of mass communication from one in which a minimal number of producers delivered news, entertainment, and culture to a public whose choices were limited. Instead, it became one in which consumers can choose for themselves what news they want to learn about, what movies they want to see, what music they will listen to, and when they will do so.

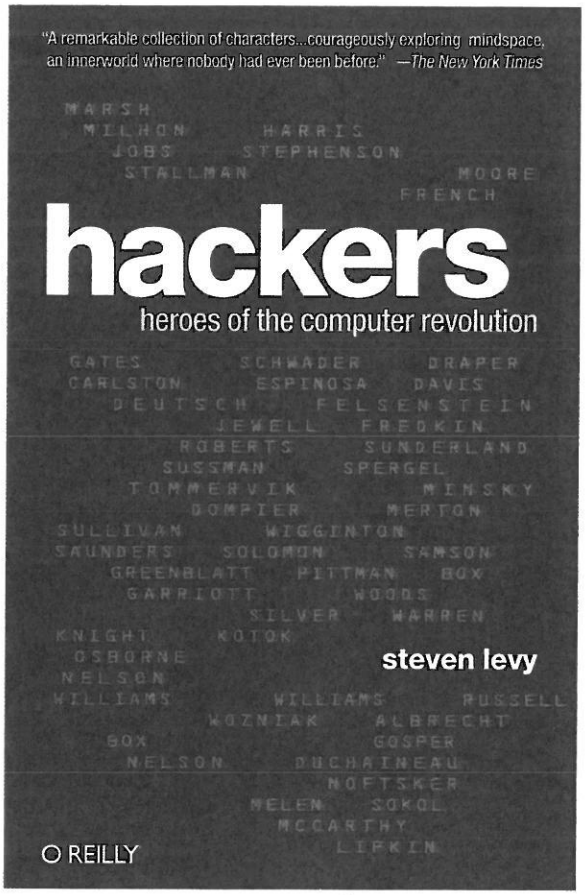
This environment of uncontrolled information is not all bliss, however. Some critics point out that the same giant media companies that dominated the older forms of media produce much of the content available on the internet. Others complain that information on the internet is uncontrolled, unreliable, and often unsuitable for young people to view.

The Hacker Ethic

As a young man, Steve Jobs saw programming computers as a way of rebelling against and controlling an increasingly technological world. Jobs and Steve Wozniak, the cofounders of Apple, built electronic "blue boxes" that let them place long-distance phone calls for free by bypassing AT&T's control system. Beyond allowing the two to steal phone service and play an occasional prank, the boxes taught Jobs that technology could empower individuals:

> What we learned was that we could build something ourselves that could control billions of dollars' worth of infrastructure in the world. . . . We could build a little thing that could control a giant thing. That was an incredible lesson.[99]

Jobs's attitude embodied what is known as the **hacker ethic**. The ethic is summed up in Steven Levy's book *Hackers*, originally published in 1984, before the internet was a public medium and before many of the major internet tools, most notably the World Wide Web, had been developed. (Levy uses the term *hackers* to refer to people who like programming computers and using them to their fullest potential. He prefers using *digital trespassers* to refer to people who break into institutional computers. It appears, however, that many of the "true" hackers are often also digital trespassers.)



Courtesy of O'Reilly Media

Author and journalist Steven Levy laid out the principles of hacker culture in his 1984 book *Hackers*, written years before the internet became a popular mass medium.

SECRET 3 ▶ Understanding the hacker ethic is critical to understanding the development of the internet because its values shaped so many of the new medium's developers. Levy lists four key principles of the hacker ethic[100]:

1. "Access to computers—and anything which might teach you something about the way the world works—should be unlimited and total." Hackers want to obtain programs, data, and computers, and they do not respect rules that keep them from these tools. They believe that they should be able to directly control any computer system they can find; what's more, they believe that they can probably do a better job of running the system than the people who own it.
2. "All information wants to be free." This translates into a disregard for copyright law. Hackers believe that all information should be available to anyone who wants to make use of it. This was at the heart of file-sharing pioneer Napster and user-video site YouTube. If you have music, photographs, artwork, writings, or programs on your hard drive, why shouldn't you be able to share them? And if those same things exist on other computers, why shouldn't you be able to access them? This idea of universally shared information is at the heart of Berners-Lee's design of the World Wide Web.
3. "Mistrust authority—promote decentralization." The hacker culture distrusts centralized bureaucratic authority. Bureaucracies hide information and make rules controlling who can have access to it. So the best way to keep information free is to keep it out in the open.
4. You should be judged by your skills and not by "bogus criteria such as degrees, age, race, or position." On the internet, traditional measures of individuals, such as age, education, sex, or income, matter less than they do under most other conditions because people are able to create identities for themselves that may or may not correspond with their actual identities. In essence, this is an extension of the multiple roles and identities people have always had. You can simultaneously be a teacher, a parent, a spouse, and a child. On the internet, users can further extend their identities, changing their sex, race, and background.

The application of the values of the hacker ethic to the internet in general provides an example of Secret 3—Everything from the margin moves to the center.

Hacking the 2016 Presidential Election

One of the most enduring controversies over the 2016 presidential election is the role that Russian hacking played in the results of the election. As you may recall, Hillary Clinton won the popular vote by nearly three million votes, but Donald Trump won the all-important electoral vote 306–232.[101] He did so because of the votes of eighty thousand in three states—Michigan, Pennsylvania, and Wisconsin.[102] So the question of what may have affected that small number of votes looms large.

While the story of what happened during the 2016 election is still emerging, several things are relatively well understood:

- The Russian digital propaganda company the Internet Research Agency set up fake Facebook and Twitter accounts that attempted to promote messages of dissention on issues such as LGBT issues, race, immigration, and gun rights. Some of these accounts had actual people behind them while others were automated bots that republished and amplified news that matched their programming.
- Russian news organizations Russia Today (RT) and Sputnik spread false stories on social media both through regular messages and paid ads. Both organizations have now been banned from advertising on Twitter.

- Russian hackers broke into Democratic National Committee computer networks and stole thousands of emails and other documents. They then released this through websites they controlled and Julian Assange's WikiLeaks. While these documents did not have any radical secrets, they did show the ugly infighting that occurs in every political operation.
- Russian hackers also broke into voter registration systems in thirty-nine states. While they attempted to modify some of the records, there is no evidence that they changed any actual votes.[103]

Figuring out what the Russians did is substantially easier than deciding what sort of effect the digital meddling had. *New Yorker* journalist Adrian Chen, often held up as an expert on the Russian hacking, writes that we should not overstate the effectiveness of the campaign by a group of Russians who barely spoke English. "[It] ignores people's tendency to share information they already agree with; and it sees evidence, in the spread of that information among self-interested groups, of some grand design by a mastermind propagandist."[104]

Election (and baseball) statistical journalist Nate Silver, at his *FiveThirtyEight* blog, cautions giving too much credit to the Russian hacking/interference in the election, writing that former FBI director James Comey's letter to Congress coming out the week before the election about Hillary Clinton's email investigation likely swayed more voters. (Does that number, 538, sound familiar? That's the number of electoral votes there are in our presidential election system.) Silver argues that Russian interference is hard to track in terms of importance because it wasn't just one thing. But mostly he argues that the Russian efforts were relatively small compared to the campaign as a whole. The Russian effort spent about $1.25 million a month, while the Trump campaign and associated organizations spent $617 million overall, and the Clinton campaign and her supporters spent $1.2 billion. Nevertheless, Silver notes that the themes of the Russian efforts matched those of the reasons that Clinton lost. The belief that Clinton was dishonest and untrustworthy were boosted by Russian-supported hashtags like #Hillary4Prison. The hacking of the Democratic National Committee's computer network and the subsequent release of emails were also important.[105]

QUESTIONING THE MEDIA

How would you be able to figure out whether the Russian hacking had any effect on the 2016 presidential election? What made finding these answers so complicated? Regardless of how you feel about the election's outcome, what should the United States be doing to protect itself against outside interference in our elections?

The Notion of Cyberspace

The word *cyberspace* is used extensively to describe the internet and the interactions that take place there. But the word predates common use of the internet and the shared culture it has created. The word *cybernetics* (from the Greek *kybernetes*, meaning "pilot" or "governor") has been in use since 1948 to refer to a science of communication and control theory. Science-fiction writer William Gibson is generally credited with coupling the prefix *cyber* to the word *space* in his 1984 novel *Neuromancer*, although the authoritative *Oxford English Dictionary* (see Chapter 4) notes that Gibson originally used the word in a magazine story in 1982. Gibson defines cyberspace in this way: "Cyberspace is where the bank keeps your money. It's where a long-distance telephone call happens. It's this ubiquitous, non-physical place where increasingly a lot of what we think of as our civilization takes place."[106] Gibson sees cyberspace and the culture of the internet as an expression of the hippie ideals of freedom and self-expression: "Tired as I am with all the hype about the Internet and the info highway, I suspect that from a future perspective it will be on a par with the invention of the city as a force in human culture."[107]

Broadening Our Online World

Before the 1900s, it was relatively easy to define community: The community was made up of the people you interacted with every day. But the growth of the mass media led to changes in our understanding of community. People no longer need to be face-to-face with each other to

QUESTIONING THE MEDIA

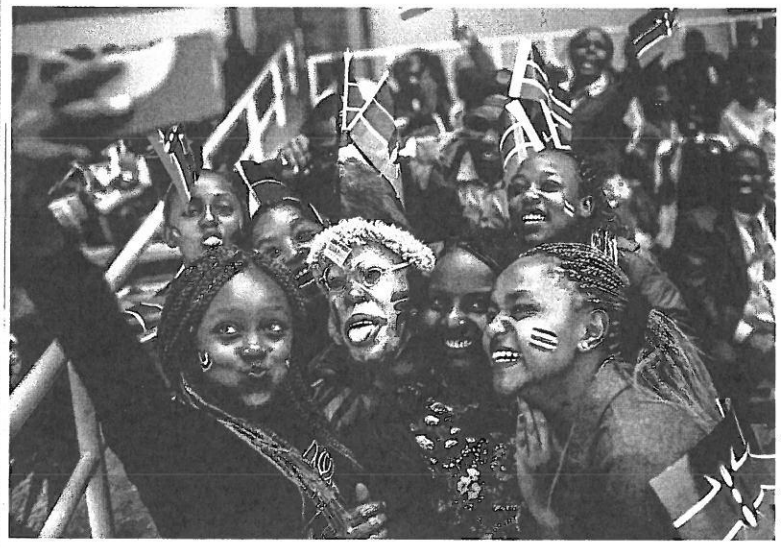
Do you agree with the hacker ethic that "information wants to be free"? If media content is going to be free, who will pay the content creators? Should the government be stopping people from sharing copyrighted materials? Why or why not?

interact. Larry Tesler, who helped develop the idea of computer communities at the Xerox PARC research center and at Apple Computer, has said that

> when we were human beings in small tribes hunting and gathering, everybody you had to deal with was somebody you saw every day. We're a species that's based on communication with our entire tribe. As the population grew and people had to split up into smaller tribes and separate, they got to the point where they would never see each other for their whole lives. The Internet is the first technology that lets us have many-to-many communication with anybody on the planet. In a sense, it's brought us back to something we lost thousands of years ago. So one reason I think the Internet's taken off so fast is that we always needed it. And we finally have it.[108]

Is It Really a World Wide Web? When Tesler claims that the internet allows people to interact with others anywhere on the planet, he overstates the case. Worldwide, approximately 46 percent of the population has internet access.[109] In developing countries, that number can average 35 percent, compared to 82 percent of the population in developed nations.[110] But the spread of mobile technology is helping bring change. Sub-Saharan Africa has the lowest percentage of people online, with only 20 percent having access, but that represents a 111 percent increase since 2010. This growth is coming because people are now getting access via phones using mobile broadband. And that technology is allowing for the 40 percent growth rate in Africa. Companies like Facebook and Google are putting substantial effort into bringing inexpensive over-the-air internet services to poorer areas.

The Digital Divide. Even in the United States, access to a high-quality internet connection is not universal. Although there are not large systemic differences in access based on race and ethnicity, research by Pew shows that access to high-speed broadband connections go up as people's education levels and income increase. Urban people are also more likely to have broadband than people in rural settings.[111]



Luis Tato/Bloomberg via Getty Images

▲ Attendees use a smartphone to take a selfie during an independence celebration in Nairobi, Kenya. People in developing countries like Kenya are most likely to go online using mobile devices.

Conflicts Over Digital Media

For all the benefits associated with the web, the new medium has been criticized on a number of fronts. For one thing, a great deal of material on the web is inappropriate for children. Another criticism is that web surfers give up their privacy when they visit certain sites. Finally, it is argued that people spend so much time with their virtual communities and friends that they forget about their real lives.

Controlling Content on the Web. The World Wide Web differs from all other media in that it is essentially an open forum where anyone can publish anything. More importantly, anyone can access anything he or she wants to. Because of this lack of control, unsupervised web surfing is not particularly suitable for children. As computers and the internet came to classrooms in the 1990s, parents and teachers became concerned about the possibility of students viewing pornography, hate speech, or even instructions on how to build a homemade bomb.

One solution to this problem is the use of filtering software, which can block access to certain kinds of material. This approach has been successful to a degree, but no filtering scheme can

block all offensive material and still allow access to a full range of sites. For example, in 1998, the Loudoun County, Virginia, public libraries installed filtering software. The software successfully blocked pornographic material, but it also blocked sites with information on sex education, breast cancer, and gay rights.[112] The fundamental problem with trying to control information on the net is that the network of networks was designed specifically to overcome blocks and breakdowns. Once information is on the net, it is virtually impossible to stop it from spreading. Net pioneer John Gilmore summed up the issue neatly: "The Net interprets censorship as damage and routes around it."[113]

Privacy and the Web. A consumer walking into a conventional bookstore can wander from aisle to aisle, picking up titles of interest. After leaving the store, no one knows what books the consumer looked at. But when that same consumer shops at the online bookstore Amazon.com, the store keeps track of everything looked at. The Amazon software will then make recommendations to the shopper according to previous searches and purchases. Is this a great convenience or a serious loss of privacy?

Web users give up their privacy every time they go online. Each time they fill out a form, join a group, or buy something, information (name, address, interests, etc.) is stored so that the owner of the site will know more about its visitors. Websites create tiny files called **cookies** to identify website visitors and potentially track their actions on the web. Cookies may identify users so that they don't have to reenter their names and passwords. Or, as Amazon's cookies do, they might keep track of which types of items a visitor likes to look at. Cookies are generally designed to assist users as they visit one particular website, but they can also be used to track users' web-surfing habits or to provide evidence of what sites they have visited.

Website developers can use cookies to tailor sites to a particular visitor. For example, a news site could use information from a cookie to provide the scores of your favorite teams, quotes for the stocks in your portfolio, or reviews of the style of music you like. This tailoring to individual tastes could take a more sinister cast, however. Web creator Tim Berners-Lee speculates that cookies could even be used to tailor propaganda to match the biases of the viewer:

> Imagine an individual visiting the webpage of a political candidate, or a controversial company. With a quick check of that person's record, the politician or company can serve up just the right mix of propaganda that will warm that particular person's heart—and tactfully suppress points he or she might object to.[114]

Convergence of Old and New Media

There is lots of talk these days about convergence and new media, such as why the web will replace the old dead-tree media (newspapers and magazines), broadcast media, and other formats as the main source for news. New media synergy, we are told, will bring together the depth of text with an abundance of photos, audio, and video. You get all of the advantages of the old media in one package.

There are signs that this is happening. NPR (formerly National Public Radio) launched its new NPR.org website in July 2009 with the goal of enabling journalists to present photos, video, audio, and written stories to go with streaming copies and transcripts of all the stories that have aired on NPR since May 2005. The site also makes these resources available on mobile media such as the iPhone and Android.[115]

Convergence is also delivering media that wouldn't be available otherwise. As will be discussed in Chapter 15, the Arab news channel Al Jazeera started its English-language service in November 2006, but it had trouble finding any U.S. cable or satellite services willing to carry it. For the time being, Americans who are interested in watching Al Jazeera must do so primarily over the internet or using a mobile device app, though a few cable services started carrying it following the Arab Spring movement in 2011.

SECRET 7 ▶ Sometimes you get reverse synergy—the worst of the old and new media in one new package. A prime example of reverse synergy happened in 2008 when Bloomberg's online financial news service posted a six-year-old news story about United Airlines (UAL) filing for bankruptcy. The story was true—it was just six years out of date. What happened was this: An undated story about UAL's 2002 bankruptcy filing showed up on a Google search on "bankruptcy 2008" done by a reporter working for Income Securities Advisor. The story from the South Florida *Sun-Sentinel* dated back to December 10, 2002, when UAL did file for bankruptcy. The reporter who performed the search posted the story to Bloomberg News. In response to the story, investors started dumping their shares in UAL, dropping the stock from $12.17 a share to approximately $3 a share. Not realizing what had happened, UAL was baffled by the tanking of its stock, but it quickly posted an online denial of the story. By the time the market closed, UAL stock was back up to $10.92.[116]

What can we learn from this? Think about Secret 7—There is no "they." The story that sent the stock price crashing was a single story from a single website. Wouldn't you think that if a major corporation had filed for bankruptcy twice in six years the story would be playing on every major news site, not just a single Florida paper that had no local connection to the story? At the risk of oversimplifying things, the story was posted because someone—a "they"—said it was so. This resulted in a huge destruction of wealth, albeit a temporary one, because of a story that had no truth value and apparently was posted completely by accident.

Everything Is Data

We are moving into an age where more and more media are delivered digitally. And that means we will be moving away from old channels like cable television, paper, or cellular phone service and moving into the use of data services.

Think about it—how often do you come close to using up your allocation of cell phone minutes? Maybe you don't even have a limit on minutes anymore. The same is likely true of text messages (i.e., SMS).

But what about when it comes to data? Ah, that's a different story. How long do you get into the month before you start getting warning notes from your provider that you've used 50 percent, 75 percent, or 90 percent of your data allocation? Of course, your mobile provider is always quite happy to sell you another bucket of data . . .

Think about all the things you use data for on your mobile device: streaming audio and video, social media, games, maybe even a little old-school email. You might also be sending photos and video back upstream through Snapchat, Instagram, or Periscope.

If you're on an iPhone, you likely burn through a lot of data using FaceTime to make your audio and video calls (though if you're smart about it, you're using Wi-Fi whenever possible). And everyone is burning through data one way or another with Skype.

Over in the world of the television, we are seeing this transformation as well. Right now, at least if you are old, you think of TV as something that comes in through cable or down from the skies via satellite. If you're really old (or poor), you think of it as something that comes in over the air through an antenna.

But as we discussed in Chapter 9, increasingly we are getting our video programing from streaming services. When I ask my students about the most recent programming they watched on television, the most common answer (with the possible exception of the World Series broadcast) was Netflix. Now Netflix is a streaming service that you get over the internet using data. Netflix is just one of many sources of streaming video: Hulu, CBS's All Access, Amazon Prime, and the list goes on.

Apple has offered a streaming box for several years called the Apple TV that the late Steve Jobs used to refer to as a hobby. But with the release of the newest version of it, Apple seems to be taking it much more seriously—with the idea that the new Apple TV could serve as a substitute to your cable or satellite service—assuming you have a big bucket of data to support it.[117]

CHAPTER REVIEW

CHAPTER SUMMARY

The internet arose in the late 1960s out of efforts to share expensive computer resources provided by the military to universities across the United States. The initial network, called ARPAnet, went online for the first time in the fall of 1969. The network operated using packet switching, a method of transferring information that breaks down messages into small packets that are transmitted separately across the network and reassembled once they are received. Through email and file sharing, ARPAnet soon became a tool used by academics to collaborate and communicate across the country.

As the number of incompatible networks grew in the 1970s, Bob Kahn and Vint Cerf developed the TCP/IP protocols that allowed the networks to communicate with each other. In 1983, ARPAnet started using the TCP/IP protocols. This is commonly seen as the true beginning of the internet.

The internet is unique among the mass media in allowing interpersonal communication through email and instant messaging and group communication through email, instant messaging, SMS, the World Wide Web, search, mobile apps, blogs, podcasts, and streaming media.

The World Wide Web was developed in 1989 by British physicist Tim Berners-Lee while he was working at the European Organization for Nuclear Research in Switzerland. His goal was to produce a decentralized system for creating and sharing documents anywhere in the world. The web has three major components: the uniform resource locator (URL), the hypertext transfer protocol (http), and the hypertext markup language (HTML). Berners-Lee published the code for the World Wide Web on the internet in 1991 for anyone in the world to use at no cost.

A growing part of online interaction is through social media, which is defined as media that allows for user-created content, comments, tagging, and social networking.

Video games are an emerging part of modern mass media that have been recognized by the U.S. Supreme Court as deserving full First Amendment protection. In addition to being a popular activity, video games, in the form of eSports, are also a spectator event now.

The internet in general and the web in particular were based on a set of values known as the hacker ethic. This ethic holds that information should be freely distributed and that individuals should have as much control over computers as possible.

The World Wide Web has turned the internet into a major mass medium that provides news, entertainment, and community interaction. The web offers a mix of content providers, including traditional media companies, new media companies offering publications available only on the web, **aggregator sites** that offer help in navigating the web, and individuals who have something they want to say.

The web has been criticized for elevating rumors to the level of news, making inappropriate material available to children, collecting private information about users, and creating a false sense of intimacy and interaction among users. This can be seen with the Russian hacking of the 2016 U.S. presidential elections.

Over the past several years, the transmission of media content has been moving from channels of legacy media into those of online digital media, allowing people to access content when and where they want to.

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internet 258
packet switching 259
ARPAnet 260
TCP/IP 260
electronic mail (email) 261
instant messaging (IM) 261
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uniform resource locator (URL) 262
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weblog (blog) 266
citizen journalism 266
social media 267
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aggregator sites 283

REVIEW QUESTIONS ▶▶

1. What was journalist Keah Brown trying to accomplish with her hashtag #DisabledAndCute?
2. How was our first nationwide interactive computing network built?
3. How does interacting online differ when you do it through an app rather than through the World Wide Web?
4. How are social media and mobile media connected to each other? How are social media changed when we use them with mobile devices?
5. If you were asked to defend video games as a medium of mass communication, how would you do that?
6. What does your author mean when he writes "Everything is data"? What kind of transformation is taking place in the legacy media industry as more media are transmitted digitally?

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